Virginia City Hybrid Energy Center
Response to Data Request
Vivian Thomson, Vice Chair, Virginia Air Pollution Control Board

Question (Page No. 5):

Under 9 VAC 5-80-1755 permit applicants "shall provide an analysis of the impairment to visibility, soils, and vegetation that would occur as a result of the source or modification. . . ."

Over the life of this facility, what will be the impacts on streams and mountain habitats in the areas mined for coal to supply the facility? Please express in terms of quantifiable impacts to aquatic and forest ecosystems, as well as negative impacts on people (e.g., blasting impacts on homes and impacts of airborne dust on public health). The Hensley report (Hensley Energy Consulting 2008) observes that the Virginia City facility will generate 2,600,000 tons of ash per year (data obtained from the PSD permit application), ten times the amount produced by a "typical" IGCC facility.

Response:

The analysis requested is provided in Section 7.3 (Additional Impact Analysis) of Volume 2 of the Air Quality Permit Application. Dominion Resources intends for its fuel mix to include coal produced in southwestern Virginia. The impacts from sourcing the coal would therefore be in the same general area. In reviewing the impacts it is important to consider the positive impacts as well as the potential negative impacts.

The VCHEC facility will have a positive direct economic impact on the local area as has been documented previously. The facility will generate significant tax revenue, worker salaries and corollary support services revenue as a consequence of this facility. However, it is expected that the facility will not stimulate significant growth in the general population that could have impacts necessitating new development that could have an incremental impact on the local environment. It is fully expected that the local work force, which currently has a relatively high unemployment rate will be sufficient for this facility. In fact, the VCHEC will provide employment stability that the region needs very much.

The primary fuel for the VCHEC will be coal mined in southwestern Virginia. Coal mining is heavily regulated and the impacts of mining are greatly reduced compared to historic mines. The Surface Mine Control and Reclamation Act of 1977 (30CFR part 700) recognizes that coal mining will have minor environmental impacts but requires that these impacts be strictly controlled. In Virginia, the SMCRA is implemented by the Department of Mines, Minerals and Energy (DMME).

According to DMME, the process to permit a new coal mine consists of an extensive and comprehensive review of all the potential impacts to the area. In addition to the environmental impacts, DMME also investigates the potential for impacts to the public health and safety. Within the health and safety review, the impacts of blasting are given

very careful scrutiny. DMME's review of the company's blasting plan may conclude that blasting must be restricted during certain times (quality of life issue). DMME may also conclude that blasting would be detrimental to the homes of neighboring citizens and would then prohibit blasting as a rock removal process.

The SMCRA process is a multi-media, multi-dimensional permitting review that is similar in complexity to the NEPA Environmental Impact Statement process. DMME maintains their permit process on an electronic permitting guide which is kept internal to DMME. The permitting includes any required NPDES and CWA Section 404 permits. In addition, the review includes impacts on the local ecology such as benthic assessments in the area streams. This process also includes a noticed public comment period like all major permitting activities. In addition to the various permits and regulatory required plans, the final mine permit document contains the entire impact statement as part of the record. This document referred to as the Finding of Fact document is available for public viewing at DMME for every applicable mine. DMME advises that this new mine permitting process generally take 1-2 years to complete.

Dominion has not committed to purchasing coal from any specific sources and therefore cannot comment on quantitative impacts from particular existing mines. DMME has advised that it does not expect any new major coal mine permitting as a consequence of the VCHEC facility. DMME states that coal mining activity has peaked in southwest Virginia so little or no additional new permitting would be expected. The VCHEC facility is therefore not likely to cause any additional environmental impacts from coal mining activity.

The proposed facility will also be designed to burn waste coal from "garbage of bituminous" (GOB) piles. This is especially important as the utilization of GOB as a fuel will provide a long term environmental benefit over the life of the VCHEC facility. It is estimated that southwest Virginia has over 400 GOB piles despoiling the environment.

Southwestern Virginia has many streams and river segments that are found in the Virginia 303(d) impaired waters list. Total Maximum Daily Load (TMDL) plans must be prepared for each of the impaired segments to address the sources of the impairment so that steps can be taken to remediate these streams so they can return to healthy water quality standards. According to the Virginia Department of Environmental Quality (DEQ) and the Division of Mine Land Reclamation (within DMME), every TMDL in the Clinch and Powell Rivers watershed mention GOB piles as having a serious and detrimental impact on the receiving stream's water quality.

GOB piles adversely impact streams in several ways. Most noticeably, large amounts of solids run off the piles into the streams, both in the form of total dissolved solids (TDS) and total suspended solids (TSS). Dominion conducted a study to ascertain the extent of the solid runoff from GOB piles. This study was recently done by Appalachian Technical Services (ATS). Representative GOB piles were assessed and ATS estimated that approximately 500 tons per year of solids were being carried into the neighboring streams

from the GOB pile runoff. Sediments of this nature have a particularly detrimental effect on the endangered fresh water mussels in these streams/rivers.

GOB piles are acidic in nature as often referred to in discussing acid mine drainage problems. This acidity also promotes the leaching out of heavy metals including copper, arsenic and mercury is also hazardous to the water species. Mercury in the water has been shown to work its way up the food chain eventually to consumption by humans.

Removal of the GOB piles for fuel also presents another ecological benefit. The areas that were previously filled with GOB can then be redeveloped and restored to original hydrology and vegetation. Streams can be likewise restored which is done in accordance with the CWA 404 permit process.

The ash from burning GOB and coal is deposited in permitted landfills. This ash is managed such that solids do not runoff during storm events as contrasted to the current legacy GOB piles.

The use of GOB as a fuel will also save the Commonwealth in clean up costs. As stated above all coal mining watershed TMDLs and Implementation Plans (IP) include Abandoned Mine Land (AML) Reclamation issues. One of the most well known is the Hurricane Fork GOB pile on Dumps Creek. The Dumps Creek draft IP states that "Discussion of reclamation efforts concentrated largely on reclamation of the gob pile adjacent to Hurricane Fork. This gob pile is generally recognized as the most significant AML feature in the Dumps Creek watershed. Discussion regarding reclamation of the gob pile covered the availability of funds to support the project, the potential for re-mining the pile for use in a proposed power plant that could utilize the gob, and the costs involved with reclamation." "Most members of the working groups agreed that the IP should focus on targeting resources toward reclamation of the most obvious AML features, such as the Hurricane Fork gob pile." The draft IP for Dumps Creek estimates that the reclamation cost of the abandoned mine lands at $10,000 per acre with the total estimated cost of restoration in excess of $2,700,000 for just this one site.

Coal mines can have short term and long term impacts on the viewscape; however, most mining in southwestern Virginia comes from deep mines with little surface impact. The topography and the vegetation of the region generally limit the view of the mining operations. These mines are managed under permits from DMME. Once mining of a permitted area is completed the area is required to be restored to a required level of topography and vegetation.

In the case of historic structures or other cultural issues, the SMCRA permitting process requires known historic structures and other cultural issues to be surveyed and the mining operation is to avoid the area and a buffer zone around the area.

Current mining operations usually have limited disturbed acreage at any given time. This limits the potential impacts on wildlife. Habitats and endangered species are evaluated as

part of the SMCRA mine permit process. In many instances, the mine ponds actually add habitat that did not previously exist.

Water management is one of the key issues facing coal mines. Water is generated from the mine dewatering as well as coal washing operations. Mines in southwestern Virginia are fairly dry. Many mines utilize a closed system, except in times of heavy precipitation. Black water releases are the most common water related non-compliance from coal mines and with the exception of gross discharge, are generally more of an aesthetic infringement than an endangerment to the ecology. Acid mine drainage is probably the greatest risk to the environment and the hardest to control. Acid mine drainage, when uncontrolled such as in the case of legacy GOB piles, can cause significant impact to the stream ecology on a long term basis. The mine drainage can be managed via neutralization at the discharge point and the installation of engineered wetlands and neutralization basins. Some acid mine drainage is treated by pumping to dewater the mine and the discharged is neutralized prior to discharge.

The transportation of the coal to the facility has environmental impacts. The facility will receive all of its fuel via trucks which generally consume diesel fuel. The consumption issue is offset by the short distance of travel whereas the coal would have likely been transported at much greater distances if not consumed locally. Dominion will work with the trucking companies to ensure that environmental impacts are kept to a minimum including for instance setting idling time limits for incoming trucks waiting to unload to follow.

Dominion is committed to operating the VCHEC facility with the minimal environmental impacts. This commitment extends to working with its fuel sources to ensure that the entire supply chain maintains its environmental stewardship. This commitment towards excellence will also include safety and health of the mine workers. Dominion will establish contractual requirements that hold its fuel vendors to high standards for both environmental stewardship as well as for health and safety metrics.

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